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May 3, 2013 – *Replaces version posted April 8, 2013*

To: All North Carolina Health Care Providers
From: Megan Davies, MD, State Epidemiologist MDavies, MD
Re: **Novel Avian Influenza A (H7N9) Detection, Testing, and Treatment in Humans**

This memo is intended to provide information to North Carolina clinicians regarding recent human infections with novel avian influenza A (H7N9) virus. Although this virus has only been identified in China at this point, clinicians should consider this information when evaluating patients with influenza-like illness due to the high rate of travel.

This version has been updated to include a recommendation for antiviral treatment of all cases under investigation for possible H7N9 infection regardless of health status or illness severity.

Summary
China began reporting cases of human infection with avian influenza A (H7N9) virus on April 1, 2013. Most infections were severe and there have been reports of deaths. This virus has never been seen before in humans and there has been no evidence of sustained person to person transmission at this point. China and Taiwan are the only countries with reported cases so far.

Case Investigation and Testing

- Testing for influenza A (H7N9) should be considered for patients with illness compatible with influenza who also meet either of the exposure criteria below:
    - Patients with recent travel to countries where human cases of novel influenza A (H7N9) virus infection have recently been detected, especially if there was recent direct or close contact with animals (such as wild birds, poultry, or pigs) or where influenza A (H7N9) viruses are known to be circulating in animals. Currently, China is the only country that has recently reported novel influenza A (H7N9) human cases.
    - Patients who have had recent contact with confirmed human cases of infection with novel influenza A (H7N9) virus.

- **Clinicians caring for patients meeting these criteria should immediately contact their local health department or the state Communicable Disease Branch (919-733-3419; available 24/7) to discuss laboratory testing and control measures.** Testing may also be considered for other persons in whom clinicians suspect influenza A (H7N9) virus infection.

- If testing for influenza A/H7N9 is approved, clinicians should obtain a nasopharyngeal swab or aspirate, place the swab or aspirate in viral transport medium and arrange for transport to the North Carolina State Laboratory of Public Health. Specimens should be collected with appropriate infection control precautions for novel virulent influenza viruses. Viral culture should not be attempted in these cases.

- For additional guidance on diagnostic testing of patients under investigation for novel influenza A (H7N9) virus infection, please see *Interim Guidance for Laboratory Testing of Persons with Suspected Infection with Highly*

Pathogenic Avian Influenza A (H5N1) Virus in the United States at http://www.cdc.gov/flu/avianflu/guidance-labtesting.htm.

- Commercially available rapid influenza diagnostic tests (RIDTs) may not detect avian or variant influenza A viruses in respiratory specimens. Therefore, a negative rapid influenza diagnostic test result does not exclude infection with influenza viruses. In addition, a positive test result for influenza A cannot confirm variant or avian influenza virus infection because these tests cannot distinguish between influenza A virus subtypes. Therefore, clinical treatment decisions should not be made on the basis of RIDT results.

Infection Control

- Clinicians should be aware of appropriate infection control guidelines for patients under investigation for infection with novel influenza A viruses. Because it has been shown to cause severe respiratory illness in cases identified so far, healthcare personnel (HCP) caring for patients under investigation for novel influenza A (H7N9) virus infection should adhere to Standard Precautions plus Droplet, Contact, and Airborne Precautions, including eye protection, until more is known about the transmission characteristics of the A (H7N9) virus.

- Contact your local health department or the state Communicable Disease Branch immediately to report any clusters of respiratory illness in HCP caring for patients with severe acute respiratory illness.

Treatment

- Due to the potential severity of illness associated with H7N9 virus infection, it is recommended that all confirmed cases, probable cases and H7N9 cases under investigation receive antiviral treatment with a neuraminidase inhibitor as early as possible. Treatment should be initiated even if it is initiated more than 48 hours after onset of illness.

- Laboratory testing and initiation of antiviral treatment should occur simultaneously; treatment should not be delayed for laboratory confirmation of influenza or H7N9 infection.

- For hospitalized patients and patients with severe or complicated illness, treatment with oral oseltamivir (and not inhaled zanamivir) is recommended because of the lack of data for inhaled zanamivir in patients with severe influenza illness.
    - The optimal duration and dose of therapy are uncertain in severe or complicated influenza. Pending further data, longer courses of treatment (e.g. 10 days of treatment) should be considered for severely ill hospitalized H7N9 patients.
    - Although oseltamivir is well absorbed in critically ill patients, for patients who cannot tolerate or absorb oral oseltamivir because of suspected or known gastric stasis, malabsorption, or gastrointestinal bleeding, intravenous (IV) zanamivir should be considered.
        - IV zanamivir is an investigational parenterally administered product available by enrollment in a clinical trial or compassionate use under an emergency investigational new drug (EIND) request to the manufacturer confirmed with FDA. IV zanamivir compassionate use request may be made by contacting the GSK Clinical Support Help Desk via email (gskclinicalsupportHD@gsk.com) or by calling 1-877-626-8019 or 1-866-341-9160.

Additional information is available from the NC Division of Public Health (www.flu.nc.gov), the World Health Organization (http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/index.html) and the CDC (http://www.cdc.gov/flu/avianflu/h7n9-virus.htm).